

II. CLAIM AMENDMENTS

1. (Currently Amended) A method for receiving a frequency modulated signal, characterized in that

the radio frequency signal is mixed and summed into a low-frequency signal that includes I and Q components of the radio frequency signal,

the falling and rising edges of said low-frequency, modulated signal are detected,

a second signal is formed on the basis of said edge detection, the frequency of the second signal being twice the frequency of said low-frequency signal, and

said second signal is frequency detected to form a—an FM demodulated signal.

2. (Original) A method according to Claim 1, characterized in that the processing of the frequency modulated signal includes the following steps:

the antenna signal is filtered with a band pass filter,

the signal is amplified,

the signal is down-converted in at least two branches with phase-shifted local oscillator signals LO,

the signal is low pass filtered and

amplified.

3. (Original) A method according to Claim 1, characterized in that the processing of the frequency modulated signal also includes the following steps:

the signals are phased in at least two branches,

the signals are summed into one branch,

the signal is low pass filtered,

amplified and

demodulated.

4. (Original) A method according to Claim 1, characterized in that the demodulation of the frequency modulated signal includes the following steps:

the modulated signal is divided into two branches, the first one for the detection of the rising signal edge and the second one for the detection of the falling signal edge;

the rising edge of the modulated signal is detected in the first branch,

the modulated signal is inverted and the rising edge of the inverted, modulated signal is detected in the second branch, and

the signals processed in the first and the second branch are combined.

5. (Original) A method according to Claim 1, characterized in that the demodulation of the frequency modulated signal includes the following steps:

the modulated signal is divided into two branches, the first one for the detection of the rising signal edge and the second one for the detection of the falling signal edge,

the rising edge of the modulated signal is detected in the first branch,

the falling edge of the modulated signal is detected in the second branch, and

the signals processed in the first and the second branch are combined.

6. (Original) A method according to Claim 1, characterized in that pulses of a predetermined length are formed on the basis of said edge detection, and the pulses are summed to form said second signal.

7. (Currently Amended) An arrangement for receiving a frequency modulated signal, characterized in that it comprises

means for mixing and summing a radio frequency signal into a low-frequency signal that includes I and Q components of the radio frequency signal, and demodulator means, which comprise

means for detecting the falling and rising edges of said low-frequency signal,

means for forming a second signal on the basis of said edge detection, the frequency of the second signal being twice the frequency of said low-frequency signal, and

means for the frequency detection of said second signal
to form a an FM demodulated signal.

8. (Original) An arrangement according to Claim 7, characterized in that it comprises mixers and 0° and 90° phase shifters for mixing the signal of at least two branches with the signal of the local oscillator LO.
9. (Original) An arrangement according to Claim 7, characterized in that it comprises 0° and 90° phase shifters, an adder and a demodulator of the frequency modulated signal.
10. (Original) An arrangement according to Claim 7, characterized in that the demodulator of the frequency modulated signal comprises two branches, of which the upper branch comprises a pulse detector for detecting the rising edge of the frequency modulated signal to be demodulated, and the lower branch comprises an inverter and a pulse detector connected in series for detecting the falling edge of the frequency modulated signal to be demodulated, and an adder that combines the branches.
11. (Original) An arrangement according to Claim 7, characterized in that the demodulator of the frequency modulated signal comprises two branches, of which the upper branch comprises a pulse detector for detecting the rising edge of the frequency modulated signal to be demodulated, and the lower branch comprises a pulse detector active on the falling edge of the signal for detecting the falling edge of the frequency modulated signal to be demodulated, and an adder that combines the branches.
12. (Original) An arrangement according to Claim 7, characterized in that the means for detecting the edges of a low-frequency signal comprise a pulse generator for forming

a pulse of a specified length as triggered by the edge of a low-frequency signal.

13. (Original) A mobile station, characterized in that it comprises an arrangement according to Claim 7 for receiving a frequency modulated signal.